

THE NUCLEAR RECEPTOR *FactsBook*

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Names

Two different ER genes called ER α and ER β were cloned in 1986 and 1996, respectively. Since ER α was for 10 years the only estrogen receptor known, it was simply called ER. After the discovery of ER β , it became ER α . Both receptors bind estradiol, a steroid hormone implicated in reproductive function and menstrual cycle in women. Estrogens are implicated in numerous diseases in humans, such as cancer, in particular breast cancer, and osteoporosis. For these reasons, ER functions have been studied intensively, an interest that increased further when the new estrogen receptor, ER β was identified. Both ERs form a clear group, called NR3A, in the nuclear receptor nomenclature and are related to the orphan receptors ERR (NR3B) and to the steroid receptors GR, PR, MR and AR (NR3C).

Species	Latin name	Other names	Accession number	References
Official name: NR3A1				
Human	<i>Homo sapiens</i>	ER, ER α	X03635	1, 2
Mouse	<i>Mus musculus</i>	ER, ER α	M38651	3
Rat	<i>Rattus sp.</i>	ER, ER α	Y00102	4
Hamster	<i>Mesocricetus auratus</i>	ER, ER α	AF181077	111
Pig	<i>Sus scrofa</i>	ER, ER α	Z37167	5
Cow	<i>Bos taurus</i>	ER, ER α	Z37167	6
Sheep	<i>Ovis aries</i>	ER, ER α	Z49257	32
Horse	<i>Equus caballus</i>	ER, ER α	AF124093	Unpub.
Whiptail lizard	<i>Cnemidophorus uniparens</i>	ER, ER α	S79923	25
Green anole	<i>Anolis carolinensis</i>	ER, ER α	AF095911	Unpub.
Chicken	<i>Gallus gallus</i>	ER, ER α	X03805	7
Zebra finch	<i>Taeniopygia guttata</i>	ER, ER α	L79911	9
<i>Xenopus</i>	<i>Xenopus laevis</i>	ER, ER α	L20735	24
Zebrafish	<i>Danio rerio</i>	ER, ER α	AB037185	Unpub.
Atlantic salmon	<i>Salmo salar</i>	ER, ER α	X89959	10
Rainbow trout	<i>Oncorhynchus mykiss</i>	ER, ER α	AJ242740	11
Japanese medaka	<i>Oryzias sp.</i>	ER, ER α	D28954	Unpub.
Red seabream	<i>Chrysophrys major</i>	ER, ER α	AB007453	12
Gilthead seabream	<i>Sparus aurata</i>	ER, ER α	AJ006039	13
Blue tilapia	<i>Oreochromis aureus</i>	ER, ER α	X93557	26
Nile tilapia	<i>Oreochromis nilotica</i>	ER, ER α	U75604	14
Atlantic croaker	<i>Micropogonias undulatus</i>	ER, ER α	AF298183	30
Channel catfish	<i>Ictalurus punctatus</i>	ER, ER α	AF253505	31
Official name: NR3A2				
Human	<i>Homo sapiens</i>	ER β	AB006590	15
Rhesus monkey	<i>Macaca mulatta</i>	ER β	AF119229	113
Marmoset	<i>Callithrix jacchus</i>	ER β	Y09372	Unpub.
Mouse	<i>Mus musculus</i>	ER β	U81451	16
Rat	<i>Rattus sp.</i>	ER β	U57439	17
Cow	<i>Bos taurus</i>	ER β	Y18017	18
Sheep	<i>Ovis aries</i>	ER β	AF177936	Unpub.
Chicken	<i>Gallus gallus</i>	ER β	AB036415	Unpub.
Quail	<i>Coturnix coturnix</i>	ER β	AF045149	19
Common starling	<i>Sturnus vulgaris</i>	ER β	AF113513	8
Zebrafish	<i>Danio rerio</i>	ER β	AJ275911	Unpub.
Rainbow trout	<i>Oncorhynchus mykiss</i>	ER β	AJ289883	Unpub.
Goldfish	<i>Carassius auratus</i>	ER β A	AF061269	33
Goldfish	<i>Carassius auratus</i>	ER β B, ER β 2	AF177465	21